

THE USE OF CLEANING PRODUCTS DURING PREGNANCY AND LOWER RESPIRATORY TRACT INFECTIONS AND WHEEZING IN THE FIRST YEAR OF LIFE

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Background and aims: Analysis of the ALSPAC birth cohort (UK) study suggested that the use of household chemicals during pregnancy may increase the risk of wheeze in the offspring. We aimed to evaluate the effects of household use of cleaning products during and after pregnancy on wheezing and lower respiratory tract infections (LRTI) during the first year of life in the INMA project.

Methods: In the Spanish INMA birth cohorts of Asturias (n=450), Gipuzkoa (n=556), Sabadell (n=578) and Valencia (n=707), the use of 9 cleaning products in the home was reported during the third trimester of pregnancy in the four cohorts, and at infant's age of 12-14 months in Asturias and Valencia cohorts. Respiratory symptoms and LRTI were reported by the mothers when the infants were 12-14 months old. Logistic regression analyses adjusting for potential confounders were performed for each of the 4 cohorts, and the combined Odds Ratios (OR) were obtained by random-effects meta-analyses.

Results: Prevalence of LRTI during the first year of life was overall 32% and was higher if the mother had used sprays (OR 1.3; 95% confidence interval (CI) 1.0-1.6) or air fresheners (OR 1.3; CI 1.0-1.6) during pregnancy. Prevalence of wheezing was 35% and the risk increased with household use of sprays (OR 1.4; CI 1.1-1.7) and solvents (OR 1.3; CI 1.0-1.6). These results were homogeneous across the four cohorts (p for heterogeneity >0.3). Analyses excluding specific use during the first year of life showed an increased risk of LRTI and wheezing when sprays or air fresheners had been used only during pregnancy.

Conclusion: The use of cleaning sprays, air fresheners or solvents during pregnancy may increase the risk of respiratory symptoms and infections in the offspring. This effect is unlikely to be fully explained by post-natal use of these products in the home.